

**ORAL ARGUMENT SCHEDULED FOR FEBRUARY 17, 2023**

**No. 21-1244**  
**(Consolidated with Nos. 21-1243 and 21-1245)**

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IN THE  
**United States Court of Appeals**  
FOR THE DISTRICT OF COLUMBIA CIRCUIT

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SOUNDEXCHANGE, INC.,  
*Appellant,*  
v.  
COPYRIGHT ROYALTY JUDGES,  
*Appellees,*  
NATIONAL RELIGIOUS BROADCASTERS  
NONCOMMERCIAL MUSIC LICENSE COMMITTEE, ET AL.,  
*Intervenors.*

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On Appeal from an Order of  
The Copyright Royalty Board

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**FINAL REPLY BRIEF OF PETITIONER**  
**SOUNDEXCHANGE, INC.**

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## GLOSSARY

The following abbreviations or terms are used in this brief.

CRB	Copyright Royalty Board
CWDT	Corrected Written Direct Testimony
CWRT	Corrected Written Rebuttal Testimony

## INTRODUCTION AND SUMMARY OF ARGUMENT

The government's brief demonstrates that the dispute between the parties on appeal is very narrow. The government does not dispute that a seller's opportunity cost sets the floor for statutory royalty rates under the governing willing buyer/willing seller standard. The government does not dispute that it accordingly would be legal error for the CRB to set a rate below opportunity cost. And the government does not dispute that after considering the evidence and adopting certain adjustments to SoundExchange's opportunity cost estimate, the CRB credited a \$0.00222 per stream opportunity cost estimate—a figure above the \$0.0021 rate that the CRB ultimately set.

Given the scope of that agreement, the government's argument on appeal is limited to contending that the \$0.00222 opportunity cost estimate the CRB credited was not actually a "finding" and was instead subject to two further "indeterminate" downward adjustments. Those arguments are meritless.

I. To begin, the CRB *did* find that the opportunity cost of licensing ad-supported commercial webcasters is \$0.00222. As the government acknowledges, the CRB considered several critiques to the

opportunity cost calculation initially proposed by Professor Willig, and made downward adjustments where they had an evidentiary basis to quantify them. Gov Br. 43. The resulting calculations appear in a portion of the Final Determination devoted to reporting the adjusted opportunity costs in Professor Willig's model. J.A. 1312-13 (slip op. 200-01). The calculations are set out in a detailed table and summarized succinctly: "As the above table shows, Professor Shapiro's adjustments reduce the opportunity cost for ad-supported services from \$0.00273 (Professor Willig's estimate) to \$0.00222 (Professor Shapiro's adjusted estimate).") J.A. 1312 (slip op. 200). That is a finding, and it was not made subject to any further adjustments.

**II.** The government's contention that the \$0.00222 finding was nonetheless subject to two additional adjustments is incorrect. The first purported adjustment has nothing to do with opportunity cost. The second—to the extent the CRB purported to make it—would be invalid given dispositive record evidence that the CRB ignored.

**A.** The first purported adjustment is that the CRB supposedly concluded that Professor Willig's adjusted opportunity cost finding was overstated because the record companies possess complementary

oligopoly power. But the passages the government invokes do not concern or even mention opportunity cost. They certainly do not conclude that the opportunity cost calculation accepted by the CRB required a downward adjustment because of oligopoly power.

Instead, those passages concern an entirely separate issue: Whether Professor Willig's model allowed record companies (through the exercise of complementary oligopoly power) to capture a disproportionate share of the *surplus* generated by agreement with an ad-supported commercial service. Put differently, the passages concern how complementary oligopoly power affects negotiation over the revenue left *after* the parties the record companies recover their opportunity costs. Whatever the merits of that discussion, it has nothing to do with Professor Willig's assessment of the royalties the rightsholders would earn in other markets (their opportunity cost) if webcasting were unavailable.

**B.** The second supposed adjustment the government identified is that Professor Willig failed to account for something the CRB called "opportunity benefits." According to the government, opportunity benefits represent "the fact that ad-supported services attract listeners

who would otherwise spend their time engaged in activities that would not produce royalties, such as listening to terrestrial radio or reading a book.” Gov. Br. 41.

SoundExchange agrees that, to the extent webcasting listeners would not engage in royalty-generating activities if webcasting were unavailable, that would reduce the sellers’ opportunity cost. But Professor Willig *did account* for this phenomenon in testimony that the CRB (and now the government on appeal) simply ignore. Professor Willig’s opportunity cost measurement is based on a survey that asked webcasting listeners what they would do if webcasting were unavailable. The survey participants had the option to indicate the extent to which they would not listen to music at all, or that they would listen to AM/FM radio, which does not generate royalties for SoundExchange’s members. And Professor Willig computed his opportunity cost finding based on this information.

It is the height of arbitrary and capricious decisionmaking to ignore countervailing, and indeed conclusive, evidence. The CRB thus had no valid basis to reduce the \$0.00222 finding due to opportunity benefit.



**III.** Finally, the government argues that the CRB was justified in refusing to consider record evidence that would have required upward adjustments to the opportunity cost. On the merits of these issues, the government is simply wrong. And its argument that omission of this evidence was harmless because it would not have changed the eventual rates the CRB set is also misplaced. If it is true, as the government agrees, that a willing seller would never accept a rate below opportunity cost, then evidence of a higher opportunity cost is relevant and crucially important to determining the lower bound for rates. The CRB's failure to consider this evidence requires vacatur in relevant part.

## **ARGUMENT**

### **I. The CRB Found That The Sellers' Opportunity Cost, After Taking Into Account Adjustments, Is \$0.00222 Per Stream.**

The government agrees that a willing seller would never sell below its opportunity cost and thus that it would be legal error for the CRB to set a rate below the seller's opportunity cost under the willing buyer/willing seller framework. *See* Gov. Br. 38 (“[T]he Judges did not dispute Professor Willig’s theoretical point that a royalty rate should cover the seller’s opportunity cost.”). While acknowledging that it would have been error to set a rate below opportunity cost, the government

contends that the CRB never made a finding as to the opportunity cost of licensing an ad-supported commercial service. That contention cannot be squared with the Determination.

As SoundExchange explained in its opening brief, the Determination discusses in extensive detail the parties' opportunity cost testimony. Opening Br. 15-22, 32-33. The CRB first considered Professor Willig's testimony that the opportunity cost was \$0.00284 per stream. *See* J.A. 1302-12 (slip op. 190-200). It then considered various critiques calling for adjustment to that figure, accepting some, and rejecting others. *Id.* Among those critiques was the criticism that Professor Willig's opportunity cost estimate failed to account for the fact that there might be fewer people listening to royalty-bearing music sources in a world without webcasting. *See* J.A. 1308-10 (slip op. 196-98).

After canvassing those critiques for 11 pages, the CRB began a new section of the Determination, entitled "The Adjusted Opportunity Costs in Professor Willig's Shapley Value Model, Incorporating the Foregoing Changes in the Opportunity Cost Attributable to Music Purchases." That section began by stating what the CRB found: "Based on the foregoing adjustments *accepted by the Judges*, Professor Willig's opportunity cost

calculation must be adjusted, as set forth [below in Figure 8].” J.A. 1312 (slip op. 200) (emphasis added); *see also* J.A. 1302-12 (slip op. 190-200). The CRB then reproduced a table from Professor Shapiro’s written testimony and concluded that “Professor Shapiro’s adjustments reduce the opportunity cost for ad-supported services from \$0.00273 (Professor Willig’s estimate) to \$0.00222 (Professor Shapiro’s adjusted estimate).” J.A. 1312 (slip op. 200).

This part of the Determination—with an extensive discussion of Professor Shapiro’s adjustments; explicit “accept[ance] by the Judges” of those adjustments, J.A. 1312 (slip op. 200); and reproduction of the chart from Professor Shapiro’s written testimony reporting his adjusted opportunity cost calculation<sup>1</sup>—is a finding that the opportunity cost is at least \$0.00222 per stream. *See United States v. Bikundi*, 926 F.3d 761, 777 (D.C. Cir. 2019) (findings need not include “magic words” or labels); *Env’t Def. Fund, Inc. v. EPA*, 510 F.2d 1292, 1304 (D.C. Cir. 1975) (affirming ALJ’s findings and reasoning, which were “implicit in and

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<sup>1</sup> As SoundExchange explained in its opening brief, Professor Shapiro actually calculated an opportunity cost of \$0.00233 after accounting for all lost royalties. *See* Opening Br. 37-38; *see also infra* Part III.

indeed suffuse[d] his entire opinion” even though they were “not recited in so many words”).

Indeed, the Determination barely mentions the concept of opportunity cost again, and does so only in the context of different topics. J.A. 1313 (slip op. 201 & nn.271, 273) (discussing opportunity cost in the context of Professor Willig’s calculation of “*statutory royalties*” (emphasis added)); J.A. 1316 (slip op. 204 & n.283) (discussing opportunity cost in the context of the CRB’s rejection of Professor Shapiro’s Nash-in-Nash model); J.A. 1318 (slip op. 206) (same); J.A. 1327 (slip op. 215) (same); J.A. 1360 (slip op. 248) (discussing opportunity cost in the context of the CRB’s rejection of the National Association of Broadcaster’s request for a separate rate for simulcasters); J.A. 1361 (slip op. 249) (same).

In sum, the CRB considered the opportunity cost evidence and found that evidence warranted an opportunity cost finding of \$0.00222 per stream. Because the government’s reliance on two additional and indeterminate flaws in the opportunity analysis is misplaced, *infra* Part II-III, it was error to set a webcasting rate below that floor.

## **II. The Government's Argument That \$0.00222 Per Stream Is Not An Appropriate Measure of Opportunity Cost For Ad-Supported Commercial Services Is Meritless**

The government claims this Court can disregard the \$0.00222 per stream opportunity cost that the CRB “accepted.” J.A. 1312 (slip op. 200). To make that claim, the government relies on two supposed flaws, each of which is “indeterminate” but both of which purportedly establish that the \$0.00222 opportunity cost computation is inflated.

The first supposed flaw was a failure to correct for the record companies’ oligopoly power. The second was a failure to consider “opportunity benefits,” *i.e.*, the notion that some webcasting listeners might not listen to royalty-bearing music sources (or listen to music at all) in the absence of webcasting. Neither purported flaw can salvage the CRB’s opportunity cost analysis.

### **A. The Government's Arguments Concerning Complementary Oligopoly Power are Meritless.**

The first “flaw” the government identifies is that Professor Willig supposedly failed in calculating opportunity cost to account for perceived oligopoly power of the record companies. According to the government, “the Judges concluded that Professor Willig had not properly accounted for the record labels’ coercive market power in the interactive market.”

Gov. Br. 40 (citing Determination at 180-85, 202-03); *id.* at 42 (“[T]he Judges repeatedly criticized his opportunity cost calculations for reasons unrelated to Professor Shapiro’s adjustments, including the fact that the adjusted model artificially incorporated record labels’ negotiating power in the interactive market.”).

The government has it wrong. The cited passages have nothing to do with opportunity cost; in fact, they never mention the concept. Instead, those passages discuss the effect of oligopoly power on negotiation over the *surplus* generated when record companies and ad-supported commercial services reach agreement, and the resulting effect on rates generated by Professor Willig’s model. Opportunity cost is the *floor* that a willing seller would accept; the CRB’s critique here does not challenge the floor but rather how far *above* the floor a willing buyer and willing seller would set the ultimate rate. As such, it calls for no adjustment—and does not purport to call for any adjustment—to the \$0.00222 opportunity cost finding.

1. As SoundExchange explained in its opening brief, Professor Willig’s Shapley Value analysis uses game theory to model the rates negotiated between record companies and webcasters. To run the model,

it is necessary to calculate the fallback value for each party. For the record companies, that means calculating opportunity cost, *i.e.*, what the record companies would earn if they did not reach an agreement with ad-supported commercial webcasters, and listeners had to replace time spent listening to those services with other activities.<sup>2</sup> Opening Br. 17-18, 26 n.7; Gov. Br. 37 (conceding that opportunity cost is only “one component of that model”). Using the record companies’ opportunity cost, Professor Willig was able to calculate the surplus generated by agreement between the parties. Professor Willig then modeled how the parties would divide that extra value based on certain assumptions and decisions. Opening Br. 17-18, 26 n.7.

2. In the first passage cited by the government, Determination at 180-85, the CRB does not take issue with or mention Professor Willig’s opportunity cost finding. Instead, it addresses the modeling assumptions that Professor Willig used to analyze how the parties would divide surplus. The passage begins by discussing Professor Willig’s assumption

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<sup>2</sup> As set out below, *infra* Part II.B, Professor Willig accounted for diversion to activities that involve listening to music *and* activities that do not involve listening to music, with the latter depressing the amount record companies would earn in the absence of agreement with commercial webcasters.

that record companies exercise complementary oligopoly power during negotiations with ad-supported commercial services. More specifically, it discusses whether that assumption allows the record companies to obtain a disproportionate share of the surplus generated by agreement and, ultimately, higher royalty rates. J.A. 1293 (slip op. 181) (“[W]hen the modeling assumes the presence of complementary oligopolists—as does Professor Willig’s modeling—it preserves a substantial measure of the Majors’ ‘Must Have’ power and translates it into higher shares of the Shapley surplus and, ultimately, higher *royalty rates*.” (emphasis added)).

After running through several stylized examples on that precise point, the CRB concluded that Professor Willig’s modeling decision to vary the order in which the record companies and webcaster negotiate does not mitigate the record companies’ ability to command a greater share of the surplus when they have complementary oligopoly power. The section then goes on to discuss why Professor Willig’s modeling choice was inconsistent with a separate proceeding, and to discuss how it inflated the ultimate rates that Professor Willig proposed. J.A. 1294-95 (slip op. 182-83).



Again, none of this has anything to do with opportunity cost. Indeed, it is telling that this discussion occurs in a section of the Determination titled: “Professor Willig’s Shapley Value Model is Inconsistent with the Shapley Modeling in *Phonorecords III* and thus Fails to Generate Effectively Competitive Rates,” J.A. 1292 (slip op. 180), rather than the subsequent section focused on “[a]lleged errors” in Professor Willig’s opportunity cost calculation, J.A. 1302 (slip op. 190).

3. The CRB returns to this same point in the second passage cited by the government as calling for a supposed adjustment on this basis. J.A. 1314-15 (slip op. 202-03). Again, the section’s title is instructive: “The Impact of Shapley ‘Arrival Orderings’ Given the Judges’ Finding That They do not Reflect ‘Effective Competition.’” J.A. 1314 (slip op. 202). The section makes clear that it is concerned with how modeling decisions—namely, the decision to model several rather than one record company—incorporate complementary oligopoly power into negotiations over the surplus and, as a result, into the ultimate rates generated by the Shapley model. J.A. 1314 (slip op. 202) (“The Judges must incorporate their prior finding that Professor Willig’s Shapley Value Model incorporates complementary oligopoly power in the number of arrival

orderings.”); *see also* J.A. 1315 (slip op. 203) (“[B]ecause the *royalty rates* derived from Professor Willig’s Shapley Value Model reflect complementary oligopoly power (even as adjusted *supra*), they must be discounted to reflect effective competition.” (emphasis added)).

The government has thus conflated the CRB’s discussion of how Professor Willig calculated opportunity cost with how Professor Willig modeled division of the extra value created by an agreement and the effect for rates generated by that model. SoundExchange disagrees with the CRB’s conclusion that the Shapley Value model yields rates that are too high due to supposed market power, but that conclusion indisputably does not concern opportunity cost. Opportunity cost sets the *floor* for the rate that any seller would willingly accept. The market power considerations discussed by the CRB are concerned with how far *above* that floor the rate would go.

All of this demonstrates why the government is incorrect to invoke the CRB’s finding that “the royalty rates [the Judges] have determined—by adjusting Professor Willig’s Shapley Model-derived rates— . . . serve only as *limited guideposts*, indicating that effectively competitive rates generated via a Shapley Value Model would be less than these levels.”

J.A. 1315 (slip op. 203 (footnote omitted)). That statement is a critique of the rates yielded by the model, not the opportunity cost calculation that informed it. The government's contention that this discussion demonstrates the \$0.00222 opportunity cost computation is overstated is incorrect.

**B. The Government's Argument Concerning  
"Opportunity Benefits" Is Also Meritless.**

The second "flaw" the government identifies concerns "opportunity benefits." According to the government, Professor Willig's opportunity cost estimate was too high because it "failed to account for the fact that ad-supported services attract listeners who would otherwise spend their time engaged in activities that would not produce royalties, such as listening to terrestrial radio or reading a book." Gov. Br. 41.

Unlike the purported oligopoly power issue discussed above, the CRB's discussion of opportunity benefit does pertain to Professor Willig's opportunity cost estimate. But the CRB's reasoning on this point was arbitrary and capricious for the most basic of reasons: Professor Willig's opportunity cost estimate took this phenomenon into account, and the CRB (and now the government on appeal) simply ignored the relevant aspects of his testimony.

1. The government cites the CRB's discussion at pages 196-98 of the Determination. In that passage, the CRB discussed the survey (the "Zauberman Survey") that Professor Willig employed in calculating opportunity cost. The CRB concluded:

because the Zauberman Survey asks respondents how they would replace time spent listening to noninteractive services, those who would substitute non-royalty bearing activities would, necessarily, if noninteractive services were available, substitute away from the non-royalty bearing activities and listen to royalty-bearing noninteractive services.

...

The Shapley Value Model constructed by Professor Willig overstates the opportunity costs because it does not consider the "opportunity benefits" generated by listeners to noninteractive services who would otherwise divert to a non-royalty bearing activity, such as reading a book, as Dr. Peterson notes. But this defect in Professor Willig's opportunity cost calculation goes further, extending to any non-royalty bearing activity undertaken by a diverted listener, including listening to AM/FM (terrestrial radio).

J.A. 1308-09 (slip op. 196-97 (footnote omitted)).

2. The government's reliance on this discussion cannot save the CRB's opportunity cost analysis.

a. As a preliminary matter, the Determination takes this critique into account. This discussion appears directly before the section of the Determination where the CRB adopts the \$0.00222 per stream estimate “[b]ased on the *foregoing adjustments* accepted by the Judges.” J.A. 1312 (slip op. 200). Any adjustment warranted by this critique was thus already taken into account under the plain language of the Determination. The Determination did not contemplate any further adjustment even assuming that this critique was valid in the first place.

b. Regardless, it would have been arbitrary and capricious to reduce Professor Willig’s opportunity cost estimate on this basis because Professor Willig’s estimate *already* took this concept into account. SoundExchange does not dispute that if webcasting were unavailable, some webcasting subscribers might divert to activities that do not generate music royalties, thus reducing the opportunity cost to the rightsholders.

Professor Willig’s opportunity cost estimate accounted for this possibility by incorporating measurements based on the Zauberman Survey, which asked listeners what they would do if webcasting were unavailable. J.A. 267 (SXPFOF ¶ 621) (“Professor Willig derived the

diversion ratios—meaning the amount of a noninteractive distributor’s audience that would switch to various other forms of music distribution and generate royalties if that noninteractive distributor were unavailable—from the results of a survey conducted by Professor Gal Zauberman.”).

As the CRB acknowledged, the Zauberman Survey expressly gave listeners the option to indicate the extent to which they would not listen to music at all, or the extent to which they would switch to AM/FM radio. J.A. 1308-10 (slip op. 196-98); J.A. 1801-03 (Willig CWDT, Appendix E at E-1-E-3 ¶¶ 2-5 & nn.4-7) (explaining that survey respondents may indicate, among other options, the extent they would listen to “AM/FM (terrestrial) radio” or “[d]o something else’ (i.e., do not listen to music and, hence, listen to less music overall)” if webcasting were unavailable).

Because Professor Willig incorporated these survey results into his calculations, his opportunity cost estimate of what copyright owners would receive in the absence of webcasting thus accounted for the fact that some webcasting subscribers would not generate any royalties if webcasting were unavailable (because they would be reading books or listening to AM/FM radio instead).

As Professor Willig explained:

[Dr. Peterson, Google's expert,] really had it wrong. There's a flat-out question in the Zauberman Survey among all the other alternatives that the respondent has in terms of what the respondent would do in reaction to losing the availability of the—of the non-interactive on-line services. One of the options is listen less, less listening. Do something else. Don't listen to music. And as it turns out, lots of people included that among their options.

...

And the way I used those data is that the different options that people say they will utilize, in reaction to losing the services, they are asked to give a set of numbers that add up to 100 percent, including the not listening, the less listening percentage of their time.

And that gets zero opportunity cost in the way I handle those numbers. When a respondent says, okay, I am not going to listen to music 10 percent of the time that I would otherwise have spent on Pandora, that 10 percent of the time gets no opportunity cost.

And the opportunity cost that I calculated are confined to the remaining 90 percent, because for me, the way I use the data, they do add up to 100 percent. So the percent of time spent less listening comes out of the total and, thereby, very much affects the opportunity cost.

J.A. 755-57 (8/25/20 Tr. 3884:14-3886:3 (Willig)). *See, e.g.*, J.A. 1804

(Willig CWDT, Appendix E at E-10 ¶¶ 20-21) (calculating “the net effect

of the above—the increased listening less the ‘drops’—on the opportunity cost for ad-supported noninteractive webcasting); J.A. 1805 (Willig CWDT, Appendix E at E-11 ¶¶ 23-24) (calculating the same net effect on the opportunity cost for subscription noninteractive webcasting).

In short, Professor Willig’s opportunity cost calculation thus fully accounted for webcasting subscribers who would not listen to royalty-bearing forms of music if webcasting were unavailable. His estimate of what the record companies would earn in the absence of webcasting would have been higher if the survey showed that more customers would divert to royalty-yielding services, and it would have been lower if the survey showed that more customers would divert to non-royalty-yielding activities.

Professor Willig also fully accounted for the fact that webcasting increases the number of people who listen to music. Professor Willig estimated the number of webcasting streams by taking the number of streams that a major webcaster (Pandora) itself projected it would make over the rate period, and then he extrapolated that to webcasting services as a whole. J.A. 270 (SXPFOF ¶ 642). Critically, that number of streams



in Professor Willig's calculation takes account of all webcasting subscribers, *including those subscribers who would not be listening to music in the absence of webcasting*. That is, it necessarily accounts for the "benefit" that some webcasting subscribers would be attracted to the service when they otherwise would not be listening to music at all because the streams those subscribers listen to are included in the total number of streams. *See* J.A. 1788-89 (Willig CWDT at 20-21 ¶¶ 43-44); *see also* J.A. 755-57 (8/25/20 Tr. 3884:14-3886:3 (Willig)); J.A. 608-09 (8/5/20 Tr. 345:16-346:19) (Willig)). And Professor Willig used that total number of streams to calculate opportunity cost on a per stream basis. *See* J.A. 1789, 1791 (Willig CWDT at 21 ¶ 45, 23 (Figure 6)).

Put another way, Professor Willig fully accounted for the fact that webcasting would attract subscribers who would not otherwise listen to music. On the front end, he identified those subscribers via the Zauberman Survey and correspondingly calculated that the record companies would receive a reduced total amount of royalties. Then on the back end, Professor Willig accounted for the fact that streams to those subscribers would reduce the per-stream royalty the record companies needed to recover their opportunity cost.

c. The CRB, and now the government, simply ignore these aspects of Professor Willig’s analysis. Thus, to the extent the Determination called for an adjustment on this basis, it would be arbitrary and capricious because the CRB ignored the very testimony that answers its concern. *Growth Energy v. EPA*, 5 F.4th 1, 31 (D.C. Cir. 2021) (holding that a decision is arbitrary and capricious if it “entirely fail[s] to consider an important aspect of the problem” or “runs counter to the evidence before the agency” (citation omitted)); *Nat’l Lifeline Ass’n v. FCC*, 921 F.3d 1102, 1111 (D.C. Cir. 2019) (“An agency cannot ignore . . . factual findings that contradict its new policy.”). The Determination did not even attempt to explain how Professor Willig’s methodology to capture non-listeners was inadequate (nor would there have been any basis to do so if it had)—it simply ignores Professor Willig’s testimony on that point.

Because the CRB misinterpreted important aspects of Professor Willig’s opportunity cost calculation and ignored relevant record evidence that directly contradicts the CRB’s result, this Court should vacate the Determination in relevant part and remand with instructions to the CRB

to set a rate for ad-supported noninteractive services at least equal to opportunity cost.

### **III. The Government Has No Adequate Response Regarding The Other Deficiencies in the CRB's Opportunity Cost Analysis**

Finally, the government argues that there was no error in the CRB's refusal to consider record evidence that opportunity cost was *higher* than the \$0.00222 per stream figure the CRB adopted from Professor Shapiro. The government's arguments are unpersuasive.

*First*, the government concedes that Professor Shapiro did not account for the opportunity cost associated with diversion to subscription noninteractive services. Gov. Br. 43. SoundExchange detailed this issue in its opening brief, pointing out that Professor Shapiro acknowledged the omission in his own written testimony. Opening Br. 37-38 ("Professor Shapiro's testimony was that the opportunity cost for ad-supported noninteractive services was \$0.00222 *plus* an additional amount associated with diversion from the subscription noninteractive services for which rates were also to be set in the proceeding below."). Yet the government asserts that "any such error would not affect the rate ultimately selected by the Judges" because the CRB based its rates on Dr. Peterson's model rather than Professor Shapiro's. Gov. Br. 43.

This argument defies logic. The government agrees with the basic economic principle that opportunity cost sets the lower limit on the rate a willing seller would accept. *See* Gov. Br. 38. But then the government's brief says that there was no need for the CRB to consider relevant evidence of a higher opportunity cost (nor make an opportunity cost finding at all) because Dr. Peterson's model "did not depend upon the calculation of opportunity cost." Gov. Br. 43. These propositions are not compatible. Far from a virtue, Dr. Peterson's silence with respect to opportunity cost only underscores the importance of the opportunity cost calculations that Professor Willig and Professor Shapiro provided. To be sure, the CRB was free to adopt Dr. Peterson's rates if they were above opportunity cost. But the CRB could not determine whether Dr. Peterson's rates exceeded opportunity cost without first considering the amount of the diversion from subscription noninteraction services. The government's illogical plea of harmless error is therefore mistaken.

The government's position is also belied by the record. As already discussed, the CRB clearly accepted Professor Shapiro's adjusted opportunity cost of \$0.00222 per stream, but it failed to account for or even acknowledge that this calculation was incomplete. *See* J.A. 1312

(slip op. 200); Opening Br. 32-33, 37-38. That is despite unrebutted record testimony that the omitted diversion added \$0.00011 to the opportunity cost total. Opening Br. 16 & n.5, 38 & n.8. The government responds by trying to erase this written testimony from the record, before retreating to its familiar fallback position that the CRB's mistake was harmless because it "would not affect" Dr. Peterson's rate of \$0.0021. Gov. Br. 44-46. These arguments again miss the mark. Whatever flaws there may be in Professor Willig's calculation of the diversion from subscription noninteractive services, the CRB was not justified in ignoring this evidence without so much as a single word of acknowledgement. The CRB's decision to find that total opportunity cost was \$0.00222 (and not at least \$0.00233) in the face of this evidence was therefore arbitrary and capricious.

Second, the government again hides behind claims of harmlessness with respect to the CRB's erroneous refusal to consider Professor Willig's unrefuted testimony that Professor Shapiro's opportunity cost calculations understated the extent to which rightsholders would lose royalties from CDs, vinyl, and digital downloads. J.A. 613-14 (8/5/20 Tr. 503:21-504:8 (Willig)); *see also* Opening Br. 18-19, 37-40. The government

tellingly does not defend the CRB's decision on the merits. Instead, it claims that "this evidentiary ruling . . . had no basis on the rate ultimately selected." Gov. Br. 45. But the government's harmlessness defense has the same holes here as everywhere else. And to the extent the government suggests that the CRB actually rejected the merits of Professor Willig's testimony, *see* Gov. Br. 47, that is a mischaracterization that the record cannot bear, J.A. 1304 (slip op. 192 n.263) (refusing to consider Professor Willig's testimony because "no such testimony . . . is in the record"). Had the CRB considered it, this evidence would have yielded an even higher opportunity cost. The CRB erred in refusing to consider it.

### CONCLUSION

For the foregoing reasons, the decision of the CRB should be vacated in relevant part and the matter remanded for further consideration.

Dated: January 12, 2023

Respectfully submitted,

/s/ Matthew S. Hellman

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## CERTIFICATE OF COMPLIANCE

This brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B) because this brief contains 4,935 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(f) and Circuit Rule 32(e)(1). This brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because this brief has been prepared in a proportionally spaced typeface using Microsoft Word for Microsoft 365 in 14-point Century Schoolbook font for the main text and 14-point Century Schoolbook font for footnotes.

January 12, 2023

/s/ Matthew S. Hellman  
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**CERTIFICATE OF SERVICE**

I hereby certify that on the 12th day of January, 2023, I caused to be electronically filed the foregoing **Final Reply Brief of Appellant SoundExchange, Inc.** with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit using the CM/ECF system. I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the CM/ECF system.

January 12, 2023

/s/ Matthew S. Hellman  
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